

GULFCO MARINE MAINTENANCE SUPERFUND SITE REMOVAL ACTION WORKPLAN

I. INTRODUCTION

A. Purpose of the Work Plan

This Work Plan sets forth certain requirements for completion of a removal action to remove or eliminate certain wastes, thereby eliminating or reducing risks from potential exposure pathways from those wastes at or from the Gulfco Marine Maintenance Superfund Site (the "Site"). The work described herein shall be implemented upon EPA approval.

B. Description of Action

An above-ground storage tank farm ("AST Tank Farm") located **in** the Southern Portion is to be addressed by this Removal Action. The AST Tank Farm is a concrete bermed area containing 14 above-ground storage tanks, three of which appear to be empty. The tank locations and designations are shown on Figure 1. The contents of the tanks are to be removed and the tanks demolished. The concrete containment slab and walls will remain in place, except that the walls shall be breached so that rainfall will freely drain from the structure. Any accumulated water contained within the bermed area shall be characterized and properly managed. Any buried pipes will be capped at the surface after removing the contents of the pipes. The tanks' contents and structures, containerized wastes, and debris will be properly managed off-site.

The specific objectives for the AST Tank Farm Removal Action are: (1) to prevent the release of chemicals of concern that are stored in the tanks and any other containers, and (2) to prevent the exposure of site workers and visitors to chemicals of concern remaining in the tanks following removal of the stored liquids and other materials. The tanks contain water, various organic phases, oily sludges, and sand, rust solids, and debris. The tanks' contents include: benzene; chloroform; 1,2dichloroethane; trichloroethylene; tetrachloroethylene; vinyl chloride; and petroleum hydrocarbons in various concentrations.

II. WORK TO BE PERFORMED

A. Preconstruction Activities

Preconstruction activities will consist of a Site inspection and assessment, and preparation of a Health and Safety Plan (HASP). The HASP will be prepared in compliance with Occupational Safety and Health Administration and EPA requirements. The HASP will be submitted to EPA and will be in place prior to any onsite activities. Site inspection and assessment shall begin with cutting weeds and vegetation as necessary to perform a visual inspection of the removal action area. This inspection shall be performed for safety purposes and to identify any drums or containers, which shall be visually inspected, inventoried, labeled with a control number, and logged, as necessary.

Sampling and Analysis Plan

Sampling of the aboveground storage tank (AST) contents was performed during the period from December 14 through 15, 2006 in accordance with a Work Plan dated November 6, 2006 (and addendum dated December 1, 2006) that were approved by an EPA letter dated December 4, 2006. As part of sampling activities, fluid levels were gauged in all ASTs and samples were collected from separate solid and liquid phases within the tanks, where present. In addition to the AST samples, samples of water accumulated within the north and south containment areas of the AST Tank Farm were collected on December 14, 2006. The AST and water samples were transported to Gulf Coast Analytical Laboratories, Inc. (GCAL) in Baton Rouge, Louisiana for analysis for various waste characterization parameters (e.g., reactivity, corrosivity, ignitability, toxicity). The results of these analyses are summarized on attached Tables 1 through 4. The original laboratory reports for these analyses were included in an April 4, 2007 Report describing the tank sampling activities. A summary of the projected tank volumes based on the gauging estimates is provided in Table 5.

The AST and water sample data listed in Tables 1 through 4 will be used for the classification and profiling of waste streams for off-site management (treatment, disposal and/or recycling) as acceptable to the intended management facilities. Possible off-site waste management facilities are listed in Table 6. All materials will be managed at a facility that is in compliance with EPA's "Off-Site Rule". Should more recent or additional data be required by these facilities for any of the waste streams, additional sampling and analyses will be performed as described below. One sample will be collected from the accumulated water within each of the north and south containment areas to evaluate possible discharge or other management options for this material. **Sampling of accumulated sludge** *{provide sampling methods}* (if any) within the containment berms will be performed as necessary.

{include QC sample collection info – rinsate, MS/MSD, trip, duplicates, frequency, etc.}

Tank Gauging - Prior to sampling or content removal (if sampling is not required), each AST will be gauged to verify the approximate content volume. For gauging and sampling purposes, the tanks will be accessed utilizing ladders and/or man

lifts. Gauging will be performed using various devices, such as weighted lines, gauge rulers, visible means, or other appropriate method based on the tank size and location, content characteristics, and content volume.

Sample Collection - Samples will be collected using dippers, sampling thieves and other sampling devices as appropriate depending on tank size, content type (solid or liquid) and content volume in order to obtain a representative sample. One representative sample will be collected from each tank waste stream. Containment area water and sludge samples will be collected directly from the containment areas using dippers, bailers, or other appropriate devices.

All sampling equipment will be decontaminated prior to use. Disposable equipment meant to be used only once and discarded will be decontaminated prior to use, unless the equipment is properly packaged and sealed. All non-disposable components of the sampling equipment will be decontaminated as follows:

- Potable water rinse;
- Liqui-nox® detergent wash;
- DI water rinse;
- Liqui-nox® detergent wash;
- DI water rinse; and
- Air dry.

A methanol or hexane rinse may be used if evidence of organic staining is found after equipment has been cleaned. Following decontamination, the sampling equipment will be placed in bags or sealed to keep the equipment clean during storage. All liquids generated as a result of decontamination processes will be containerized and handled as IDW.

Samples will be transferred from the sampling devices to sample containers in a central staging area near the AST Tank Farm. **Sample containers** *{include sample container type, volume, sample holding time, preservative, etc.}* will be prepared specifically for the required analyses by the analytical laboratory. Any required preservatives will be placed in the sample containers by the laboratory prior to shipment to the Site.

To prevent misidentification of samples, labels will be affixed to each sample container. Information will be written on the label with a permanent marker. The labels will be sufficiently durable to remain legible even when wet and will contain the following information:

- Sampling identification name;
- Name or initials of collector;
- Date and time of collection;
- Analysis required (if space on label allows); and
- Preservative inside bottle, if applicable.

Sample custody, packaging and shipment will be performed in accordance with Standard Operating Procedure (SOP) No.6 in the approved Gulfco RI/FS Field Sampling Plan (FSP) (PBW, 2006a). Samples will be placed in shipping coolers containing bagged, cubed ice immediately following collection. Samples will be shipped to the laboratory via an overnight courier service, generally on the day they are collected.

Evidence of collection, shipment, and laboratory receipt must be documented on a Chain-of-Custody record by the signature of the individuals collecting, shipping and receiving each sample. A sample is considered in custody if it is:

- In a person's actual possession;
- In view, after being in physical possession;
- Sealed so that no one can tamper with it, after having been in physical custody; and/or
- In a secured area restricted to authorized personnel.

Chain-of-Custody Records will be used, by all personnel, to record the collection and shipment of all samples. The Chain-of-Custody Record may specify the analyses to be performed and should contain at least the following information:

- Name and address of originating location of samples;
- Name of laboratory where samples are sent;
- Any pertinent directions/instructions to laboratory;
- Sample type (e.g., aqueous);
- Listing of all sample bottles, size, identification, collection date and time, and preservative, if any, and type of analysis to be performed by the laboratory;
- Sample ID;
- Date and time of sample collection; and
- Signature of collector as relinquishing, with date/time.

The Chain-of-Custody procedure will be as follows:

- 1) The field technician collecting the sample shall be responsible for initiating the Chain-of-Custody Record. Samples can be grouped for shipment on a common form.
- 2) Each time responsibility for custody of the samples changes, the receiving and relinquishing custodians will sign the record and note the date and time.
- 3) The Chain-of-Custody Record shall be sealed in a watertight container, placed in the shipping container, and the shipping container sealed prior to giving it to the carrier. The carrier waybill shall serve as an extension of the Chain-of-Custody Record between the final field custodian and receipt in the laboratory. The commercial carrier is not considered part of the COC chain and is not required to sign the COC.

- 4) Upon receipt in the laboratory, a designated individual shall open the shipping containers, measure and record cooler temperature, compare the contents with the Chain-of-Custody Record, and sign and date the record. Any discrepancies shall be noted on the Chain-of-Custody Record.
- 5) If discrepancies occur, the samples in question shall be segregated from normal sample storage and the project manager will be notified for clarification.
- 6) Chain-of-Custody Records, including waybills, if any, shall be maintained as part of the project records.

Sample Analyses - The analytical suite for AST and accumulated sludge samples (if any) will be determined based on the requirements of the off-site waste management facility. Based on the previous data in Table 4, the containment area water samples will be analyzed for volatile organic compounds (VOCs), pesticides and metals using the methods listed for water samples in the approved RI/FS FSP. Considering the intended use of these data, validation will be performed at Data Review Level 2 as described in the approved Gulfco RI/FS Quality Assurance Project Plan QAPP (PBW, 2006b). Sample analyses will be performed by GCAL, whose laboratory QAPP was provided as Appendix G of the RI/FS QAPP. All analytical data collected under this Order shall be provided electronically to EPA.

Construction Quality Assurance Plan

The Construction Quality Assurance Plan (CQAP) for the Removal Action is provided below. This plan describes the project-specific components of the performance methods and quality assurance program to ensure that the completed project meets or exceeds all design criteria, plans, and specifications.

Responsibilities and Authorities - The Construction Quality Assurance (CQA) Officer will be Eric Pastor, P.E. of Pastor, Behling & Wheeler, LLC (PBW). Mr. Pastor will be assisted in the day-to-day project inspection activities by other PBW personnel, all of whom will have at least three years of engineering and/or consulting experience. EPA and/or its contractors may perform additional construction inspection/oversight at EPA's discretion.

CQA Qualifications - Mr. Pastor's and PBW's qualifications were provided to EPA in a letter dated August 26, 2005. As noted above, all inspection personnel will have at least three years of engineering and/or consulting experience.

CQA Inspection and Verification Activities - A CQA inspector will be on-site to monitor the performance of all tank content removal, truck loading, tank decontamination, and tank demolition activities; verify compliance with environmental requirements; and ensure compliance with all health and safety procedures. The CQA inspector will verify that removal action activities have been performed in accordance with this Work Plan and the project specifications. A CQA inspector will also collect the containment berm water and sludge (if any) samples as described above. CQA

inspection documentation will be performed in accordance with SOP No. 1 provided in Appendix A of the approved RI/FS FSP. This documentation will be retained in the project files in accordance with the requirements of the amended Unilateral Administrative Order (UAO) for the Site.

Regulatory Compliance Plan

In accordance with the National Contingency Plan, removal actions under Section 106 of CERCLA are required to meet the substantive requirements of other laws unless an ARAR waiver is granted by the lead regulatory agency. Compliance with the administrative requirements (e.g., permitting, administrative reviews, reporting, and record keeping) of other laws is not required under CERCLA. The substantive ARARs are divided into the three categories:

- Chemical-specific requirements, health- or risk-based numerical values, or methodologies that specify the acceptable amount or concentration of a chemical that may be found in, or discharged to, the environment;
- Location-specific requirements- restrictions placed on the types of activities that can be conducted or on the concentration of hazardous substances that can be present solely because of the location where they will be conducted; and
- Action-specific requirements- technology or activity-based requirements or limitations on actions taken with respect to hazardous wastes.

Chemical-specific requirements - The primary chemical-specific requirements for the removal action are the chemical-specific waste classification standards under 30 TAC 335 Subchapter R and the hazardous waste identification requirements in 40 CFR Part 261. These requirements will be used for the classification of the tank contents prior to removal and off-site management.

Location-specific requirements - No location-specific requirements were identified for the removal action.

Action-specific requirements - Action-specific requirements for the removal action include the following:

- OSHA requirements pertaining to hazardous waste operations (29 CFR Part 1910.120) will be followed during all on-site work.
- Texas Commission on Environmental Quality (TCEQ) standards for hazardous waste generators (30 TAC Chapter 335, Subchapter C), including the Land Disposal Restrictions (Chapter 335, Subchapter 0) for any wastes to be landfilled will apply. Procedures to be implemented for compliance with generator requirements include completion of a One-Time Shipment Request for Texas Waste Code For Shipment of Hazardous and Class 1 Waste (TCEQ Form 0757) and/or other required forms. Compliance with off-site waste shipment requirements including, U.S. Department of Transportation (DOT) regulations

contained in 49 C.F.R 173, and 179 and placarded regulations in 49 C.F.R 172 will be ensured through the use of only permitted waste haulers. Compliance with off-site waste management requirements, including Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901, *et seq.* at 40 C.F.R 260 *et seq.* and related Texas state requirements will be ensured through the use of only the potential facilities listed in Table 6. Compliance with the provisions of the NCP, 40 C.F.R 300.440, with regard to EPA approval of the off-site waste management facilities will be performed through EPA approval of this Work Plan.

- TPDES Multi Sector General Permit (Permit No. TXR050000) requirements for Sector Q (Water Transportation) pertaining to discharge of stormwater will be considered in evaluating the potential for discharge of water collected within the AST Tank Farm containment berms to the Intracoastal Waterway.

Waste Management Plan

The AST data listed in Tables 1 through 4 will be used for the classification and profiling of waste streams for off-site management (treatment, disposal and/or recycling) as acceptable to the intended management facilities. Hazardous and non-hazardous wastes, as well as non-waste materials, shall be handled and managed in accordance with all applicable or relevant and appropriate requirements. To the extent possible based on tank content volumes, characteristics and waste classifications, the tank contents will be transferred directly from the tanks to the waste haulers (typically vacuum tankers) for liquid waste. Waste loads will be transported to one or more of the facilities listed in Table 6. All off-site transportation and management will be performed in accordance with applicable U.S. Department of Transportation (USDOT) requirements. All materials will be managed at a facility that is in compliance with EPA's "Off-Site Rule". Wastewater from tank decontamination operations will be handled similarly. Following decontamination through triple rinsing, tanks not identified for re-use will be cut up and sold as scrap or disposed as non-hazardous waste. All loads will be properly manifested prior to leaving the Site.

Emissions Control Plan

During tank liquid content transfer operations, tank vapors will be vented through carbon canister or similar devices. Air exhaust from vacuum trucks and any other exhaust that potentially could contain volatile emissions shall be captured and treated onsite with vapor-phase carbon.

Ambient air monitoring will be periodically performed by the remediation contractor while tank contents are being transferred from the ASTs to trucks, and while gauging and sampling (if any) of the ASTs is being performed. Monitoring will be performed for total organic vapors using an organic vapor meter with a photoionization detector. During tank content transfer activities, additional monitoring may be performed using chemical-specific Draeger tubes. Monitoring measurements will be recorded by contractor personnel and will be included in the final report.

Contingency Plan

This contingency plan describes procedures to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste constituents, procedures to be followed in the event of a spill, and procedures to be followed for movement of equipment and personnel from low-lying areas during a high water event.

Spill Prevention - In order to minimize the potential for spills or release of hazardous constituents to the environment, liquid tank contents will be transferred directly to transport trucks when possible. Potential spills at the tanks during this process will be contained by the existing tank containment berms. Receiving trucks will be loaded within temporary loading areas constructed to contain potential spills during the loading process. **Spill control and cleanup kits** *{include spill kit contents}* along with fire extinguishers and eye wash kits will be located in the AST Tank Farm and loading areas.

Spill Response/Notification - In the event of a spill, field crews will immediately contain the spill as necessary to prevent a release and notify on-site CQA and EPA representatives. If not on-site, the EPA RPM or OSC will be notified immediately thereafter. In the event of any spill which causes or threatens a release of waste material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the Regional Duty Officer, Prevention and Response Branch, EPA Region 6, 214-665-3166, and the EPA Regional Emergency 24 hour telephone number, 1-866-372-77 will be notified if the RPM/OSC is not available. In addition, in the event of any release of a hazardous substance from the Site which, pursuant to Section 103 of CERCLA, requires reporting to the National Response Center, the National Response Center will be contacted at (800) 424-8802. A written report will be submitted to EPA within 7 days after each such release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the recurrence of such a release.

Site Activities during High Water Event - In the event that a high water condition (storm surge or hurricane) is predicted for the Site during the performance of the Work, the remediation contractor will take all appropriate precautions to secure tanks, staging areas and equipment. Depending on the specific conditions, these precautions may include evacuation of the Site by all personnel. The remediation contractor and the CQA Officer will work closely with the EPA representatives to determine the appropriate precautions to be taken on a case by case basis depending on the timing and severity of the predicted high water conditions.

Health and Safety Plan (HSP)

Prior to Site mobilization, the remediation contractor will prepare a Health and Safety Plan (HSP) in accordance with EPA's Standard Operating Safety Guide (PUB

9285.1-03, PB 92-963414, June 1992) and all currently applicable regulations found at 29 CFR 1910.120. The HSP will ensure the protection of the public health and safety during performance of the removal action and will be submitted to EPA for review. Changes to the plan recommended by EPA will be incorporated into the final plan that will be implemented during the pendency of the removal action. All requirements under the Occupational Safety and Health Act (OSHA) of 1970, 29 U.S.C. § 651 et seq., and under the laws of the State approved under Section 18 of the Federal OSHA laws, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include Hazardous Materials Operation, 20 CFR § 1910, as amended by 54 Fed. Reg. 9317 (March, 1989), all OSHA General Industry (29 CFR § 1910) and Construction (29 CFR § 1926) standards wherever they are applicable, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR § 300, relating to the conduct of work at Superfund sites.

Schedule

Following selection of a remediation contractor, and all appropriate notifications, the removal action will be implemented as described herein. It is anticipated that the HASP will be submitted within 10 days of EPA approval to proceed and mobilization will be performed within 30 days. Depending on Site and weather conditions, it is anticipated that field activities may be completed within three to five weeks. The Final Report (described below) will be submitted within 45 days after completion of the field activities.

B. Mobilization and Site Preparation

Mobilization and site preparation will involve mobilizing personnel, equipment, supplies and incidentals onto the project site; establishing all offices and facilities necessary to implement the project; and preparation of the site for the construction work. The major components of site preparation are:

- Utility Connections - Supplying electrical and potable water sources within the work area limits.
- Clearing and Grubbing - Clearing and grubbing and/or mowing areas as required for access to the work and surrounding areas and for constructing roads, work areas, and staging areas.
- Temporary Road Construction - Constructing temporary roads as necessary to provide access and egress to the site, and access and egress to the work areas.
- Work/Staging Area - Constructing work, staging and containment areas.

C. Removal Action Activities

Site removal action activities will consist of the following tasks:

Task 1 - Accumulated Water Removal- The purpose of this task is to remove any water accumulated within the containment berms in order to facilitate subsequent removal action activities. Data from water samples will be compared to TPDES Multi Sector General Permit (Permit No. TXR050000) requirements for Sector Q (Water Transportation). If the water sample concentrations do not exceed these criteria, the water will be discharged directly to the Intracoastal Waterway. If the water sample concentrations exceed these criteria, then the water will be transported for off-site management at one of the facilities listed in Table 6, or another facility approved in advance by EPA. This task will include the following:

- a. Sample and analyze the accumulated water, as needed, to confirm previous data, evaluate management options and facilitate removal;
- b. As necessary, transfer the water to temporary storage tanks to allow the removal action to continue pending determination of water discharge/management options;
- c. Appropriately manage (discharge or otherwise manage) the accumulated water based on the sample analyses and management option evaluation, in accordance with all applicable state and federal regulations; and
- d. Secure all records documenting the water characterization and subsequent management.

Task 2 - Container Content Removal and Disposal - The purpose of this task is to remove residual materials within AST Tank Farm containers followed by off-site management. Specifically, the liquid and sludge/solid contents of the above-ground storage tanks will be removed from the tanks and either recycled or disposed at one of the potential facilities listed in Table 6. To the extent possible based on tank content volumes, characteristics and waste classifications, the liquid tank contents will be transferred directly from the tanks to the waste haulers (typically vacuum tankers). The removal method for the tank contents will be determined after selection of the remedial contractor and will be selected and implemented to control volatile emissions. Debris that is encountered will be removed by suitable methods {provide methods} and placed into lined roll-off containers that will be covered except while the debris is being added. Transport of residual containerized materials/wastes to appropriate off-site management facilities will be performed in accordance with all applicable state and federal regulations. All records documenting the waste stream characteristics, classifications, quantities and final management locations will be secured as part of this task.

Task 3 - Container Removal - The purpose of this task is to remove containers associated with former Site operations (e.g., ASTs and drums) from the AST Tank Farm area. The following activities will be performed as part of this task:

- a. Evaluate the potential for re-use of containers. Based on this evaluation, identify containers for re-use and containers for demolition and disposal/recycling;
- b. Decontaminate containers intended for re-use. Develop decontamination procedures on a container-specific basis {provide methods} considering former content

September 9, 2009

characteristics and process knowledge. Manage all decontamination fluids in accordance with applicable state and federal regulations. Document decontamination procedures used;

- c. Remove re-usable containers from the Site following proper decontamination. Document container recipient; and
- d. Decontaminate and demolish all containers not suitable for re-use. Demolition may be performed on or off-site. Secure a certificate of destruction for each item demolished. Transport tank demolition debris off-site for recycling or disposal.

Task 4 - AST Containment Area Decontamination - The purpose of this task is to decontaminate the former AST containment areas. The following activities will be performed as part of this task:

- a. Sample and analyze residual sludge (if any) within the containment berms to evaluate management options and facilitate waste classification (if needed);
- b. **Remove and manage the sludge** *{include sludge removal/handling methods}* (if any) in accordance with all applicable state and federal regulations;
- c. Pressure-wash the concrete floor and berms of the former AST Tank Farm and manage all washwater in accordance with all applicable state and federal regulations;
- d. **Breach concrete berms** *{include methods & locations}* in the former AST area at one or more locations as needed to preclude potential future water accumulation within this area; and
- e. Secure all records documenting the sludge characterization and subsequent management.

D. Emissions Control

The emissions control plan described above will be implemented throughout the removal and material-handling phases of the removal action to control air emissions. As noted therein, the air exhaust from any vacuum trucks and any other exhaust that potentially could contain volatile emissions shall be captured and treated onsite with vapor-phase carbon.

E. Site Restoration and Demobilization

After completion of the removal action, the temporary roads and work areas will be dismantled and removed. Personnel, equipment, office trailer, supplies and incidentals that were used on the removal project will be removed from the site, unless required for the completion of other work at the Site.

F. Preparation of Final Report

Following satisfactory completion of all removal activities described herein, a Final Report describing all activities performed shall be prepared and submitted to the RPM/OSC for review and approval. The Final Report shall conform, at a minimum, with the requirement set forth in Section 300.165 of the NCP entitled "OSC" Reports." The Final Report shall include a listing of quantities and types of materials removed off-site or handled on-site, a discussion of removal and disposal options considered for those materials removed, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (*e.g.*, manifests, invoices, bills, contracts, and permits). *{include pictures and costs}*

III. REFERENCES

LT Environmental, Inc. (LTE), 1999. Site Characterization Report. Hercules Marine Service Site Freeport, Brazoria County Texas. June.

Pastor, Behling & Wheeler, LLC (PBW), 2006a. Sampling and Analysis Plan - Volume I Field Sampling Plan, Gulfco Marine Maintenance Site, Freeport, Texas. March 14.

Pastor, Behling & Wheeler, LLC (PBW), 2006b. Sampling and Analysis Plan - Volume II Quality Assurance Project Plan, Gulfco Marine Maintenance Site, Freeport, Texas. March 14.